

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application of: Michael L. Boyer II *et al.*

Confirmation No.: 2300

Application No.: 09/814,214

Art Unit: 3738

Filed: March 22, 2001

Examiner: Chattopadhyay, U.

For: BONE IMPLANTS WITH
CENTRAL CHAMBERS

Attorney Docket No.: 8932-342

REPLY BRIEF

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Sir:

Pursuant to the provisions of 37 C.F.R. § 1.193(b), Appellant submits herewith a Reply Brief in Response to the Examiner's Answer mailed August 7, 2003. A Request for Oral Argument is being submitted concurrently herewith, as a separate paper, with provision for the required fee.

SUMMARY OF THE INVENTION - 37 C.F.R. § 1.192(c)(5)

This invention relates to an implant for orthopedic applications, and more particularly, an implant formed from two or more bone portions. (*See, e.g.*, specification at 1:12-13; Fig. 26). Bone grafts have become an important and accepted means for treating bone fractures and defects. (*Id.*, 1:17-18). Bone grafting involves the surgical transplantation of pieces of bone within the body. (*Id.*, 1:22-23). Prior art implants are produced with an inefficient use of source bones. (*Id.*, 5:20-21). Thus, there is a need for an implant that allows more efficient use of source material. (*Id.*, 6:30-31). More specifically, there is a need for an implant that is an integrated implant comprising two or more bone fragments that are interlocked to form a mechanically effective, strong unit. (*Id.*, 6:31-33). In one embodiment, an implant **1550** is fabricated from two pieces of bone **1552**, **1554** provided with interlocking ridges **1560** and grooves **1562** and retained together, for example, with pins **1564** passing through aligned holes **1566** in the two pieces **1552**, **1554**. (*Id.*, 29:5-18; Fig. 26). In general, most of the structure of implant **1550** is like or comparable to the structure of

implants 1510, 1540. (*Id.*, 29:2-3). The implant can be provided with a hollow interior to form an interior space. (*See, e.g., Id.*, 28:23-24). This interior space can be filled with bone chips or any other osteoconductive material to further promote the formation of new bone. (*See, e.g., Id.*, 28:24-26).

RESPONSE TO EXAMINER'S ARGUMENTS

A. The Embodiment of FIG. 26 Does Meet the Limitations of Claims 1 and 27.

The Examiner's Answer states that "the embodiment shown in Figure 26 does not itself meet the limitations of claims 1 and 27, specifically that of the implant comprising a hollow body with a substantially enclosed hollow region formed between the two bone pieces." (Examiner's Answer, pp. 3-4). Appellant respectfully disagrees.

As stated in Appellant's specification, "[i]n general, most of the structure of implant 1550 is like or comparable to the structure of implants 1510, 1540." (Specification, 29:2-3). Thus, as described in the specification with respect to implant 1510 of FIG. 21, the implant of FIG. 26 also can be provided with a hollow interior to form an interior space. (*See, e.g., Id.*, 28:23-24). This interior space can be filled with bone chips or any other osteoconductive material to further promote the formation of new bone. (*See, e.g., Id.*, 28:24-26). Nonetheless, FIG. 26 was reproduced in Appellant's Brief on Appeal as a non-limiting example of the scope of claims 1 and 27.

The Examiner's Answer also states that "[t]he embodiment in Figure 26, in fact, cannot have a hollow interior because the top and bottom bone portions are mated together at their surfaces 1556, 1558 be complimentary ridges and grooves." Again, Appellant respectfully disagrees. In the embodiment of FIG. 26, for example, two pieces of bone 1552, 1554 are provided with interlocking ridges 1560 and grooves 1562 that are configured and dimensioned for mutual engagement. When the two pieces of bone 1552, 1554 are coupled together, *nothing precludes the existence of a substantially enclosed hollow region formed between them.*

B. The Examiner's Answer Gives Undue Breadth To the Limitation "substantially enclosed hollow region."

The Examiner's Answer states that "[c]laims 1 and 27 are therefore broad enough in scope to read on more than one embodiment, including that of Figure 4B."

(Examiner's Answer, p. 4). Appellant believes, however, that this statement gives undue breadth to the limitation "substantially enclosed hollow region."

Appellant's FIG. 4B shows a clearly *open-ended* structure in which nothing is substantially enclosed. Appellant submits that the construction shown in FIG. 4B -- like the construction of Fig. 8A of the Grooms '143 publication -- could only fall within the scope of claims 1 and 27 if the word "substantially" was allowed to negate the meaning of "enclosed hollow region."

In interpreting the term "substantially enclosed," the Examiner's Answer relies on claim 7 and FIGS. 7A-7C. Claim 7, however, is not even at issue in the present appeal.¹

The Examiner's Answer further states that "[n]egation of 'enclosed hollow region' would be a region that is not surrounded on *any* side." (Examiner's Answer, p. 5) (emphasis added). Appellant respectfully submits that such a construction makes little sense. The word "substantially" simply is not used by Appellant to negate the meaning of the words it modifies.


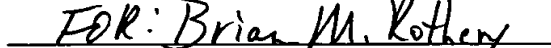
CONCLUSION

Appellant respectfully submits that the final rejections of claims 1-6, 8-15, and 24-34 are in error and should be reversed.

No fee is believed to be due for this submission. Should any fees be required, however, please charge such fees to Pennie & Edmonds LLP Deposit Account No. 16-1150.

Date: October 7, 2003

Respectfully Submitted,

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¹ The Examiner's Answer also states that "dependent claim 7 further limits the claimed invention to the embodiment shown in Figures 7A-7C and dependent claim 8 further limits the claimed invention to the embodiments shown in at least Figures 5A-5E." (Examiner's Answer, p. 4). Appellant respectfully submits that neither of claims 7 or 8 ever have been limited by Appellant *only* to the constructions as depicted in the cited figures.